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ABSTRACT

This monthly report documents the accomplishments of the Year 2000 project in Rhode Island's public higher education. It reviews computer problems related to the Year 2000 date change, noting the basic technical solution necessary to avoid disruption to higher education, and summarizes Executive Order 99-1, issued in January 1999, requiring all state agencies and departments to create a Year 2000 team composed of individuals critical to compliance efforts, and requiring each department to resolve or complete five tasks on mission-critical and other systems. Tasks include remediation, testing, development of contingency plans, confirmation of vendor/supplier compliance, and independent verification and validation. Institutions included in this program include the Community College of Rhode Island, Rhode Island College, and the University of Rhode Island, all of which are revising their Year 2000 contingency plans as needed. The report notes project objectives and strategies and describes the inventory and tracking instrument; the three institutions progress in meeting the technical challenges of the new millennium are highlighted. Appendixes include operational definitions of Executive Order 99-1 tasks; an Executive Order 99-1 waiver request; and inventory and tracking instruments for the three institutions. (SM)

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ED 438 752

Overview of Project Year 2000 in Rhode Island Public Higher Education

October 1999

Rhode Island Office of Higher Education
Division of Finance and Management

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
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OCTOBER 1999 UPDATE

This page highlights each institution's progress in meeting the technological challenges of the new millennium.

Community College of Rhode Island

1. ***All mission critical systems are operating with Year 2000 compliant systems.***
2. With a few minor exceptions, all IBM clone PC's have been upgraded or replaced.
3. The Capital Asset System, in the other administrative systems category, will be replaced with a compliant system by November.
4. Under other administrative systems, hardware for the Interactive Voice Response System (IVR) is in place, but the school is still waiting for the vendor to make the software Y2K compliant. The estimated completion date is November.

Rhode Island College

1. Replacement of some of the administrative systems/applications (Student Information System, PACE Degree Audit, INAS Financial Needs, and PARS Financial Awards) with PeopleSoft applications has been postponed again. ***The current estimated date of compliance is January, 2000.***
2. The following programming languages/databases are now Year 2000 compliant: Adabase/Natural, Natural Security, and Predict. COBOL, CICS and Vision (Quickjob) have an estimated compliance data of November.
3. Replacement of the Alumni Development system has been delayed again. The estimated date of compliance is currently November.
4. Completion of updates to the VM and DOS/VSE operating systems has been postponed again. The estimated compliance date is now November.
5. Completion of the Film Catalog/Scheduler replacement has again been postponed. The new estimated compliance date is November.

University of Rhode Island

1. Completion of the Student Information System conversion has been postponed again. The new estimated compliance date is November.
2. Completion of upgrades to systems utilizing the UNIX operating system has been postponed again. The new estimated compliance date is November.
3. Completion of the IVR system update has been postponed until November.
4. The upgrade of the HVAC systems at CCE Shepard's Building have been postponed until November.
5. The Fire Alarm Panel at CCE Shepard's Building, previously identified as compliant, is being upgraded. Procurement is in process for services to upgrade, program and test the panel. The estimated compliance date is November.
6. Replacement of chip embedded VCR's and multiplexers for the Sercurity Monitoring System at CCE Shepard's Building are in the purchasing process and are projected to be compliant by November.
7. The estimated completion date for the upgrades to the Windows NT servers (computers used for networking) has been delayed until November.

OVERVIEW OF PROJECT YEAR 2000
IN RHODE ISLAND PUBLIC HIGHER EDUCATION
October, 1999

Introduction and Monthly State Reporting Requirements

As reported in February, new and significantly greater reporting requirements have been established through Executive Order 99-1, which was signed by the Honorable Lincoln Almond on January 21, 1999. The order stipulates that all State agencies and departments must create a "Year 2000 Team" composed of certain individuals critical to the compliance effort. Higher Education has long been aware of the need to resolve Year 2000 problems. The current members of the "Higher Education Year 2000 Team" include:

Team Leader: Richard A. Mumford, Associate Commissioner of Higher Education

CCRI:	RIC:	URI:	OHE:
Al Sevigny	Vince Ross	Paul Gandel	Chris Wessells
Rick Fontaine	David George	Kathy Malion	Bill Ferland
Steve Marginson	John Fitta	Vern Wyman	
		Charlie Schifino	
		Ron Bernier	

The Executive Order also requires each department to resolve or complete five general tasks on "mission-critical systems" and "other systems" on or before specified dates. The tasks include: (1) remediation, (2) testing, (3) development of contingency plans, (4) confirmation of vendor/supplier compliance, and (5) independent verification and validation (IV&V). See Appendix A for definitions of these terms. In the Executive Order, the Governor provides a means to request from the State CIO a waiver of these requirements. In fact, due to the volume and complexity of many systems in higher education, we requested a waiver and provided assurances that all significant systems, time-sensitive events, and facilities

will be assessed, tested (if necessary) and corrected to achieve compliance. In a memorandum from the State CIO (see Appendix B) , to the Commissioner, Barbara Weaver states that a waiver is unnecessary "since most of the activity will have been completed within the time frames established by Governor Almond's Executive Order 99-1..."

The institutions are revising Year 2000 contingency plans as needed. Per Executive Order 99-1 the contingency plans will be submitted to the State CIO with the monthly Higher Education Year 2000 report. The plans focus on "mission critical" systems. Revised contingency plans, which were submitted to the Office of Higher Education with the institutions' August updates, were forwarded to the State CIO and Year 2000 Coordinator for review. (The University's contingency plans can be found on the Internet at: www.uri.edu/y2k/.)

This monthly report also reflects information on the status of IV&V for mission critical systems. Those data are listed in the Inventory Tracking Sheets listed in Appendix C. Because the requirements for doing IV&V were not specified until February 1999, the system of higher education did not budget for IV&V activities in FY 1999 or FY 2000. As a result of this late timing on instructions for Year 2000 issues, there is practically no funding for IV&V activities in public higher education. The consensus of the Higher Education Year 2000 Team is to spend our limited Year 2000 funds on "testing" rather than IV&V. If additional IV&V funding is made available through the Department of Administration, then higher education will certainly make a request for such funding. In general, however, it is our opinion that due to excessive and in some instances unnecessary costs, higher education will only perform some testing and IV&V on systems that are in question. For example, Rhode Island College is replacing non-compliant legacy administrative systems with state-of-the-art systems from PeopleSoft that are compliant. Obviously, the College will not contract with an independent consultant to do verification and validation on such newly-developed systems.

The State CIO has requested monthly updates on the RIC/KPMG Year 2000 project that involves the implementation of modules within PeopleSoft Financials, Human Resources, and Student Administration systems to replace non-compliant

administrative systems. To meet that reporting requirement, higher education is submitting the RIC/KPMG steering committee minutes with the monthly Higher Education Year 2000 report. The College has established a web site to update the College community and the public on the status of the RIC/KPMG Year 2000. That site is located at: http://www.ric.edu/ric2000/. Aside from the myriad of State reporting requirements, Higher Education will continue to report its progress in achieving compliance in all relevant areas under the jurisdiction of the Board of Governors.

Executive Order 99-1 also requires that monthly reports reflecting revised FIAA (Fiscal Integrity and Accountability) data be submitted to the State CIO. The following table summarizes the latest estimates of expenditures and encumbrances on our major systems and interfaces to achieve Year 2000 compliance:

FIAA Categories	Prior Year(s) Expend/ Encumbered	FY 1998 Expend/ Encumbered	FY 1999 Expend/ Encumbered	FY 2000 Expend/ Encumbered (Revised 10/99)
Computing	$50,000	$491,588	$3,475,691	$1,888,015
Information	-0-	-0-	-0-	-0-
Business	-0-	$80,000	-0-	-0-
Environmental	-0-	-0-	$4,000	-0-
Interfaces	-0-	$68,743	$302,040	-0-

On February 17, 1999, copies of the FIAA data were sent to Governor Almond, the Speaker of the House, the Senate Majority leader, the State Controller, the State Year 2000 Coordinator, the State Auditor General, and the State Library. The results of FIAA evaluations, assurances given by appropriate institution officials, and other information provide reasonable, but not absolute, assurance that all systems and interfaces of the institutions under the Board of Governors will be Year 2000 compliant when the projects identified in this report are corrected (see Appendix C).

Other data reported to the CIO in April included higher education's estimate of on-site staffing for the Year 2000 transition. Specifically, we provided the CIO with our best estimates of the number of FTE and associated overtime and holiday pay costs for key personnel who will be on-site during the holiday and weekend period at the end of December 1999 and into January 2000. The FTE estimates include personnel from various areas, including Housing and Residential Life, Security, MIS, Physical Plant, etc.

	Number of FTE	Estimated Labor Costs
URI	48	$51,460
RIC	22	$36,000
CCRI	20	$20,642
Higher Education Total	**90**	**$108,102**

These estimates were provided to help the CIO identify additional Y2K costs that could be funded in FY 2000; it is expected that if the CIO requires such personnel to be on-site during the transition, then associated costs must be covered by the Office of Library and Information Services within the Department of Administration.

Aside from a myriad of State reporting requirements, there are several on-going issues of Year 2000 compliance unique to institutions of higher education. The Board is already aware that many institutions of higher education, governments, private firms and other groups are struggling to solve Year 2000 compliance problems associated with software, hardware and a variety of business and environmental systems. Like most organizations, the Rhode Island System of Public Higher Education has been working to rectify these problems for several years. Audit reports completed in the winter of 1997 by KPMG Peat Marwick LLP, note that the Rhode Island System of Public Higher Education is facing these challenges and is developing programs to ensure that all critical business systems are Year 2000 compliant.

In March of 1997, the Office of Higher Education staff consulted MIS professionals at URI, RIC and CCRI regarding Year 2000 problems and determined that progress was being made to either replace or reprogram various MIS systems and applications. In November 1997, the Office of Higher Education formulated a tracking instrument to build an inventory of systems that will have to be Year 2000 compliant. That instrument was designed to serve as a gauge to measure progress toward Year 2000 compliance for all computing systems hardware and software as well as other business and environmental systems that could be impacted by year 2000 problems. Background information used to develop items listed in the tracking instrument was obtained from the Year 2000 Information Center[1], the MIT Year 2000 Project[2], the Brown University Year 2000 Page[3], CAUSE[4] and other Year 2000 publications and web sites. Data collected with the tracking instruments were presented in earlier versions of this report[5] that were delivered to the Board Finance Committee and the full Board in December 1997, May 1998, and October 1998. This report is an update to the previous overview and is intended to brief the Board of Governors for Higher Education and State Officials on progress made in achieving Year 2000 compliance.

The Problem

The fundamental problem associated with the Year 2000 date change stems from the method programmers commonly stored data for dates: MM/DD/YY. This means that two digits are reserved for the month (MM), two digits for the day (DD) and two digits for the year (YY). For many years this simple approach of using two digits to represent a year, rather than four digits, facilitated savings on costs associated with system memory, storage and data entry time. In fact, the use of

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[1] The Year 2000 Information Center is located at: http://www.year2000.com/

[2] The MIT Year 2000 Project is located at: http://mitva.mit.edu/mity2k/

[3] The Brown University Year 2000 page is located at: http://www.brown.edu/Facilities/CIS/App_Dev/y2k/y2k_home.html

[4] CAUSE is located at: http://www.cause.org

[5] *Overview of Project Year 2000 in Rhode Island Public Higher Education*, Winter 1997.

two-digit fields is so widespread in older programs, databases and systems that virtually every organization in the world that uses technology will be affected by this problem. Obviously, when the date changes to January 1, 2000, or 01/01/00, serious problems may arise in legacy systems.

Moreover, computer programs that contain two-digit date fields for sorting and calculations will yield erroneous information. Inherently, these programs assume that a year equivalent to 00 (i.e. following the previous example, YY=00) is the year 1900. To illustrate the problem, assume that a person is born on May 31st, 1944. That data is stored in the computer as 05/31/44. If that person's age is calculated on June 1, 1998 (or 06/01/98), then the computer correctly determines the individuals age to be 54 (by subtracting 44 from 98). In the year 2000, the computer program would calculate that individuals age to be -44 (by subtracting 44 from 00). Similar problems occur when computational sorting is done on two-digit year fields, resulting in sequences that are erroneous. Leap-year calculations and data also have peculiar problems that must receive adjustment.

> ***The Year 2000 is a leap year, but some computer systems fail to recognize this fact. Any year divisible by four is a leap year; and many computer programmers also know that there is an exception: a year divisible by 100 is not a leap year. But some programmers are unaware that there is an exception to the exception: if the year is also divisible by 400, then it is a leap year. Consequently, 1900 was not a leap year, nor is 2100, but 2000 is a leap year. All of this is relevant for the computer programs that carry out a straightforward calculation to determine whether February 29th exists in the year 2000; note that this is a problem that may not be recognized in some business organizations until two months after New Year's Eve at the turn of the millennium.[6]***

[6] Yourdon, Ed and Yourdon, Jennifer, *Time Bomb 2000!*, Prentice-Hall, January 1998.

Programs that are designed to use data that generate output for years beyond 2000 must be corrected even sooner. Some systems have already run into problems with more difficulties predicted for 1999. This is especially true for federal and state agencies that start their new fiscal year in the previous calendar year. In higher education, we have already made adjustments for financial aid and grants that span multiple years beyond the year 2000.

> ***Prime candidates for pre-2000 glitches include applications that have expiration dates, coverage dates, contract terms, project completion dates, delivery dates, payment schedules, age and birth dates, release dates, notification dates and graduation dates.***[7]

Another possible bug is the application of "nines" as a programming technique. Many programmers use a series of nines as a "flag" or as an end of program marker. Whatever functions the analyst intended for these "nines" will determine their potential for damage.[8] September 9, 1999 (9/9/99) is one date where this issue will be tested.

In addition to the obvious impacts on computing systems and programs, Year 2000 problems are endemic to any business or environmental system that contains embedded chips with fixed two-digit year data and associated algorithms (e.g. automatic doors, HVAC systems, security systems, irrigation systems, traffic lights, elevators, etc.). Additionally, administrative systems at the institutions may require modification to account for changes in electronic fund transfers, direct deposits, financial aid systems, etc.

The United States government has created a standard definition of Year 2000 compliance:

> ***"Year 2000 compliant", as used in this part, means, with respect to information technology, that the***

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[7] Hoffman, Thomas and King, Julia, Early warning signs, Computerworld, August 24, 1998.

[8] Examples include deleting data files and terminating execution of the program.

> ***information technology accurately processes date/time data (including, but not limited to, calculating, comparing and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information technology, used in combination with the information technology being acquired, properly exchanges date/time data with it.***[9]

In sum, the scope of the problem and the number of changes are potentially very large. Almost anything related to computers might be affected: hardware, from desktops to mainframes; and software, both vendor-supported products and systems that have been developed by programmers within the public system of higher education.

Objectives and Strategies

The overall objective of the project remains to avoid any disruption to higher education business due to the use of two digits to represent the year. However, other goals can be achieved provided they do not conflict with the overall objective. These goals are to ensure that no new problems are introduced by trying to solve the problem too quickly, solve the problem in a cost-effective manner, and produce long-term benefits, such as establishing an inventory or improving test systems.

The basic technical solution will be to solve the Year 2000 Date Problem at URI, RIC and CCRI by using four-digit years instead of two-digit years. It is the only complete and long-term solution; alternatives are more likely to cause problems. However, if there are extenuating circumstances, other solutions should and will be considered.

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[9] *White Paper On Application and Implementation of Year 2000 Federal Acquisition Regulation Guidance*, August 97.

Through a systemwide procurement effort led by the Office of Higher Education, KPMG Peat Marwick, LLP was hired to serve as the prime contractor to assist with implementation of Higher Education PeopleSoft administrative systems. Rhode Island College has engaged KPMG consultants under that contract to assist with a rapid implementation of key modules within the PeopleSoft Financials, Human Resources and Student systems. Rhode Island College will require $3.95 Million in consulting services from KPMG. Because the *"intellectual property"* of PeopleSoft systems developed at RIC resides within Public Higher Education, those initial systems will be leveraged and thus shared with the University and the Community College (at no cost) to reduce the overall cost of implementation within the System of Higher Education. Aside from the PeopleSoft implementation effort at Rhode Island College, it is not necessary to bring in consultants to help rectify problems. Significant progress has been made by the University and Community College in achieving compliance and it appears that additional consultants/programmers will not be required to assist programmers at CCRI and URI. The Rhode Island Office of Higher Education will continue to monitor progress through discussions with the institutions and with updates made by the institutions to the tracking instrument.

Aside from consultants, it may be appropriate to lease/purchase programming tools to assist in solving programming and database Year 2000 date problems. The tools that are commonly available are helpful for finding date occurrences, change management, etc. However, no tool can guarantee solving the problem without manual intervention. In cases where tools may offer a prudent solution, the institution must determine the scope of the problem and what work needs to be done. Then it can find a suitable tool(s). The tool(s) would most likely be for a specific platform and for a specific function.

Similar to most institutions of higher education, Rhode Island public institutions will employ two primary strategies to solve Year 2000 problems:

1. **Repair and Re-engineer of systems**
2. **Replacement of systems**

The degree to which systems are replaced as opposed to being repaired or re-engineered will largely be determined by the availability of resources. Key

applications that may be replaced are Student Information Systems, Financial and Accounting Systems and Human Resource Systems. Note, however, that implementation of new administrative systems will require considerable time, human resources and funds. Institutions[10] estimate that replacement of complex systems may cost many times as much as re-engineering or repairing alternatives; therefore, obtaining upgrades, patches, reprogramming, etc. will likely be a key strategy for achieving Year 2000 compliance in Rhode Island Public Higher Education.

Inventory and Tracking Instrument

From previous work done in Rhode Island Public Higher Education and upon review of several Year 2000 projects, there are definitive categories of items that must be addressed when evaluating and monitoring the effort to become Year 2000 compliant.

Computing and Information Systems:

- Operating Systems
- Computing Hardware
- Network Electronics Hardware/Software
- Administrative Systems/Applications
- Academic Systems/Applications
- Programming Languages/Databases
- Desk top Applications
  (Note that Year 2000 problems associated with desk top computing applications will be resolved by replacing applications or obtaining upgrades/software "patches" from vendors.)

Other Business and Environmental Systems:

- Elevators/Escalators
- Automatic Doors
- Automated Parking Systems
- Heating, Ventilation and Air Conditioning (HVAC) Systems
- Fire Alarms/Sprinkler Systems
- Lawns/Grounds Irrigation Systems
- Greenhouse Timers Lighting/Ventilation/Humidifiers
- Emergency Backup Generators
- Outdoor and Security Lighting

[10] MIT and Brown University (see their Y2K Pages).

- ❖ Traffic Lights
- ❖ Automatic Locks/Swipe Cards

External Systems:

- ❖ Electronic Funds Transfers (Banking, Insurance, Financial Aid, etc.)
- ❖ Bank Accounts (Direct Deposits, Loans, etc.)
- ❖ State/Federal Systems (Payroll, Grants, Loans, etc.)
  (Note compliance with external systems will be resolved through ongoing discussions with banks, insurance companies, government agencies, etc.)

The categories for monitoring Year 2000 problems were listed in a spreadsheet for each institution. The spreadsheets, or "Tracking Instruments," are listed in Appendix C and contain responses prepared by URI, RIC and CCRI. These response data reflect an updated self-assessment and inventory of *Computing and Information Systems* as well as *Other Business and Environmental Systems.* Specifically, the instruments delineate all key systems and associated information, including:

1. **Currently Year 2000 Compliant (Yes or NO).**
2. **Estimated Date of Compliance.**
3. **Progress to Date and Explanation of the Methods/Means of Achieving Year 2000 Compliance.**

Due to new reporting requirements stipulated in Executive Order 99-1, the institutions are making updates to the tracking instruments on a monthly basis in order to gauge progress in becoming Year 2000 compliant and to provide information to key decision makers. The institutions are responsible for the accuracy of the information supplied on the tracking instruments — estimates have been used in some cases and will require refinement as efforts to resolve problems progress.

The next update of this report and the Year 2000 tracking Instruments will be completed in October, 1999. All previous versions of the Higher Education Year 2000 Report are available at http://www.uri.edu/ribog/he2000.htm.

Appendix A

DRAFT/PROPOSED OPERATIONAL DEFINITIONS OF EXECUTIVE ORDER 99-1 TASKS

By: Don Estes, March 2, 1999

Remediation: The process of replacing an existing, non-compliant application with a newly written or licensed, compliant application, or the process of renovating an existing, non-compliant application to bring it into compliance. A project is said to be "in remediation" if the process has begun but is not yet in production use, and it is said to be remediated or "Year 2000 ready" if it is back in production or ready to be put into production but not necessarily future date tested.

Testing: An application undergoing 19xx testing is in remediation but not yet ready for production use, and an application undergoing 20xx testing is said to be in testing for Year 2000 compliancy. Note: I am saying here that I don't consider an application to be in testing unless it is Year 2000 ready.

Develop Contingency Plans: The process of arriving at emergency solutions for getting the job done without a reliable computer system available. A technical alternative plan, such as using a PC based database temporarily to receive input data, might be considered part of an emergency plan, provided it does not depend on the primary system being available.

Confirm Vendor/Supplier Compliance: The process of soliciting vendor compliance assurances regarding specific computer hardware and software products required for business operation, and either testing the products for Year 2000 compliance or developing business contingency plans in case the assurances prove false.

IV&V (Independent Validation and Verification): Validating the process of Year 2000 testing and Verifying the results of Year 2000 testing, to ensure that the tests were both comprehensive and sufficient for the business risk involved. Note: many organizations reverse the definition as Verifying the process and Validating the results; there is no standard usage.

Appendix B

MEMORANDUM REGARDING EXECUTIVE ORDER 99-1 WAIVER REQUEST

From: Barbara Weaver, State CIO, March 15, 1999

STATE OF RHODE ISLAND
Department of Administration
Office of Library & Information Services
One Capitol Hill
Providence, RI 02908-5870

OFFICE OF COMMISSIONER
OF
HIGHER EDUCATION

MAR 17 1999

MEMORANDUM

To: Stephen T. Hulbert, Commissioner, Office of Higher Education

From: Barbara Weaver, Chief Information Officer

Subject: Waiver Request

Date: March 15, 1999

Thank you for the comprehensive update on the status of Y2K remediation in the higher education institutions. It is obvious that a great deal of time and attention has been devoted to assuring that all mission-critical systems will be in compliance by the deadline dates.

Since most of the activity will have been completed within the time frames established by Governor Almond's Executive Order 99-1, there is no need for a waiver for these items. The major effort that appears to need such consideration is the implementation of the PeopleSoft Financial, Human Resource, and Student Systems at Rhode Island College. I am willing to grant a waiver for the completion dates on these systems; however, I will require a separate monthly progress report on these systems to make sure that implementation is indeed complete and that the systems are fully operational by November 30, 1999. I will also require monthly updates on your contingency plans for this project as it moves forward.

With respect to the need for IV&V, future progress reports should identify those mission-critical systems and/or applications that will be subject to IV&V and those that will not, with justification for those for which you do not plan to conduct this review.

Again thank you for your cooperation and diligence in this matter.

c--Richard Mumford, Finance and Management, Office of Higher Education
Sally Spadaro, Y2K Coordinator, OLIS

Appendix C

PROJECT YEAR 2000 — INVENTORY AND TRACKING INSTRUMENTS
RHODE ISLAND PUBLIC HIGHER EDUCATION

October, 1999

RHODE ISLAND BOARD OF GOVERNORS FOR HIGHER EDUCATION
PROJECT YEAR 2000 -- INVENTORY TRACKING SHEET
UNIVERSITY OF RHODE ISLAND, OCTOBER 1999

URI MAJOR SYSTEM or COMPONENT	Year 2000 Compliant (YES/NO)	Estimated Date of Compliance (Month/Year)	Progress to Date and Explanation of the Methods/Means of Achieving Year 2000 Compliance	IV & V (YES/NO)
All Operating Systems				
Windows 95/NT	Yes		Windows NT 4.0 is Yr. 2000 compliant. Windows NT 3.51 has a few bugs but expect to abandon before Yr. 2000. Windows 95 is largely compliant, expect it to be fixed or replaced by Yr. 2000.	
Mac O/S	Yes			
O/S 390	Yes			
MVS	Yes			
UNIX (Digital)	No	November, 1999	Three systems needed to be upgraded to fix this problem. One upgrade has been completed, another will be completed by the end of September and the last one will be completed no later than the first week of October.	
AIX	Yes			
VM-CMS	No		System has been discontinued.	
Desktop Applications		November, 1999	Year 2000 Problems with desktop computing applications will be resolved by replacing applications or obtaining upgrades from vendors. Computers in labs will be complete before classes begin in the Fall.	
Computing Hardware				
IBM ES9000	Yes			
NT Servers	No	November, 1999	Three NT servers are not Year 2000 compliant: Dell 6VFCM (Accounting Server), Dell 534KW (Master Domain Controller), IBM PS/2 95 23C4072 (Back-up Master Domain Controller). The Accounting Server requires a software patch that will be applied shortly. The two Domain Controllers will be replaced this summer with hardware that is "in-house."	
DEC Alpha Servers	Yes			
IBM Desktop Computers	Yes			
Dell Desktop Computers	Yes			
Mac/Apple Desktop Computers	Yes			
RS6000	Yes			

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RHODE ISLAND BOARD OF GOVERNORS FOR HIGHER EDUCATION
PROJECT YEAR 2000 -- INVENTORY TRACKING SHEET
UNIVERSITY OF RHODE ISLAND, OCTOBER 1999

URI MAJOR SYSTEM or COMPONENT	Year 2000 Compliant (YES/NO)	Estimated Date of Compliance (Month/Year)	Progress to Date and Explanation of the Methods/Means of Achieving Year 2000 Compliance	IV & V (YES/NO)
Network Electronics Hardware/Software				
Routers	7513 Yes		AGS Routers not compliant; these routers will be removed before 2000.	
Switches	Yes			
Terminal Servers	Yes			
Modems	Yes			
Network Mgt.	Yes			
Administrative Systems/Applications				
Student Information System	No	November, 1999	Conversion of existing systems are currently 99% complete. Final survey of software and testing still needs to be completed.	
SAG FRS Plus	Yes			
Human Resource System	Yes			
BSR Development System	Yes			
PACE Degree Audit	Yes			
INAS Financial Needs	Yes			
PARS Financial Awards	Yes			
Other Administrative Systems				
Student ID/Swipe Cards	Yes			
Library Systems	Yes		Release 11 of Innovative Interfaces System provides this option.	
Telephone Systems	Yes		Angels Software has been installed and is Yr. 2000 compliant.	
IVR Systems	No	November, 1999	Replaced with upgraded equipment. Software updated and conversion is 99% complete. Final clean-up of a few routines and final testing of those routines will be completed in November.	
Student Health Admin. System	Yes			
Y2K System Test			We have established an environment which will allow us to simulate the year 2000. This environment will provide continuous testing for Y2K beginning in October and remain until January 2000. We will incur additional costs for this. This currently in place and testing is coming.	

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RHODE ISLAND BOARD OF GOVERNORS FOR HIGHER EDUCATION
PROJECT YEAR 2000 -- INVENTORY TRACKING SHEET
UNIVERSITY OF RHODE ISLAND, OCTOBER 1999

URI MAJOR SYSTEM or COMPONENT	Year 2000 Compliant (YES/NO)	Estimated Date of Compliance (Month/Year)	Progress to Date and Explanation of the Methods/Means of Achieving Year 2000 Compliance	IV & V (YES/NO)
Academic Computing Systems/Applications				
ESRI GIS Systems/ARCINFO	Yes			
SAS	Yes			
BMDP	No		Use of BMDP is being discontinued at URI.	
SPSS	No		SPSS Versions 6.1 and 8.0 are 99% compliant. X11and ARIMA are not yet compliant.	
LISREL	Yes			
EQS	No	November, 1999	Year 2000 compliant Version 6 will be installed in 1999.	
LIMDEP	Yes		Version 7 is compliant.	
Programming Languages/Databases				
COBOL	Yes		The current version of COBOL is Year 2000 compliant.	
CICS	Yes			
Adabase/Natural	Yes		Adabase and Natural are currently Year 2000 compliant.	
SuperNatural	Yes		Supernatural is currently Year 2000 compliant. Upgrades to the computing environment at the University are now under way.	
Oracle 7/8 RDBMS	Yes			

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URI MAJOR SYSTEM or COMPONENT	Year 2000 Compliant (YES/NO)	Estimated Date of Compliance (Month/Year)	Progress to Date and Explanation of the Methods/Means of Achieving Year 2000 Compliance	IV & V (YES/NO)
Other Business & Environmental Systems				
Elevators/Lifts	Yes		Have confirmed compliance of all elevator and lift equipment.	
Automatic Doors	Yes		The University does not have computer-monitored access systems.	
Automated Parking Systems	Yes		No computer controlled systems or embedded chips.	
Heating, AC, Ventilation Systems	Kingston-Yes; CCE- No	November, 1999	Heating, AC, Ventilation Systems - For the six buildings at Bay and Kingston with Siemens control systems, all have been modified, tested, and confirmed to be Y2K compliant as of August 1999. The upgrade for the CCE Shepard's Building Honeywell control system is presently in the purchasing process and is projected to be in place by November.	
Security Alarm Systems	Kingston-Yes; CCE- No	November, 1999	Security Monitoring System (CCE Shepard's Building) - Replacement of all date chip embedded VCR's and multiplexers are in the purchasing process and are projected to be in place by November.	
Fire Alarms/Sprinkler Systems	Kingston -Yes, CCE- No	November, 1999	(Kingston) These systems are not run by programmed timers; therefore, they are Year 2000 compliant. Fire Alarm Pannel--(CCE Shepards Building) - Procurement is in process to secure the services to upgrade, program, and testing of the Simplex 4100 fire alarm panel with work to be completed by November.	
Lawns/Grounds Irrigation/Sprinklers	Yes		The University is not currently utillizing computer automated irrigation systems in grounds operations.	
Greenhouse Timers	Yes		The University is not currently utillizing computer automated timing systems in greenhouses.	
Emergency Generators	Yes		Emergency generators do not have computer controls or embedded chips.	
Lighting Systems, Outdoor/Security	Yes		All lighting systems are run on mechanical timing mechanisms, not program timers, therefore they are Year 2000 compliant.	
Automatic Locks/Swipe Cards	Yes		The WAPAC card access system used in the residence halls is Y2K compliant.	

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All Operating Systems				
Windows 95/NT	Yes			NO[1]
Mac O/S	Yes			NO[1]
Novell Netware	N/A		All Novell replaced with Windows NT.	N/A
Open VMS Digital	Yes		Vendor supplied Y2K patches are applied, as they become available.	NO[1]
UNIX	N/A		No supported Unix currently in use.	N/A
VM	No	November, 1999	See Note 1 below.	NO[1]
DOS/VSE	No	November, 1999	See Note 1 below.	NO[1]
Desktop Applications	No	Ongoing	Replacement/upgrade as part of Technology Bond Fund Initiative.	NO[1]
Computing Hardware				
IBM 9221	Yes			NO[1]
Intel Servers	Yes			NO[1]
DEC Alpha Servers	Yes			NO[1]
Intel Desktops	No	Ongoing	Replacement/upgrade as part of Technology Bond Fund Initiative.	NO[1]
Apple Desktops	No	Ongoing	Replacement/upgrade as part of Technology Bond Fund Initiative.	NO[1]

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Network Electronics Hardware/Software				
Routers	Yes, See Note 3		Replacement/upgrade as part of Technology Bond Fund Initiative.	NO[1,2]
Switches	Yes, See Note 3		Replacement/upgrade as part of Technology Bond Fund Initiative.	NO[1,2]
Terminal Servers	Yes, See Note 3		Replacement/upgrade as part of Technology Bond Fund Initiative.	NO[1,2]
Modems	Yes, See Note 3		Replacement/upgrade as part of Technology Bond Fund Initiative.	NO[1,2]
IBM ISN Legacy Network System	Yes, See Note 2		Replacement/upgrade as part of Technology Bond Fund Initiative.	NO[1,2]
Administrative Systems/Applications				
Student Information System	No*	January, 2000	Functionality replaced w/ PeopleSoft which is Y2K compliant.	NO[3]
Financial/Accounting System	Yes		Functionality replaced w/ PeopleSoft which is Y2K compliant.	NO[3]
Human Resource System	Yes		Functionality replaced w/ PeopleSoft which is Y2K compliant.	NO[3]
Alumni Development System	No	November, 1999	To be replaced w/ MS Access 98 system, currently in beta testing.	NO[3]
PACE Degree Audit	No*	January, 2000	Functionality replaced w/ PeopleSoft which is Y2K compliant.	NO[3]
INAS Financial Needs	No*	January, 2000	Functionality replaced w/ PeopleSoft which is Y2K compliant.	NO[3]
PARS Financial Awards	No*	January, 2000	Functionality replaced w/ PeopleSoft which is Y2K compliant.	NO[3]
Other Administrative Systems				NO[1]
Student ID/Swipe Cards	Yes			NO[1]
Library Systems, HELIN	Yes			NO[1]
Telephone Systems	Yes		Installation complete.	NO[1]
IVR Systems	Yes			NO[1]
Film Catalog/Scheduler	No	November, 1999	To be replaced by an MS Access based system. Completing final user testing.	NO[1]
Academic Computing Systems/Applications				
SAS	Yes		SAS Y2K compliance Information provided by SAS. Institutional research will be provided through PeopleSoft systems.	NO[1]
SPSS	Yes			NO[1]

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Programming Languages/Databases				
COBOL	No	November, 1999	See Notes 1 and 4 below.	NO[1]
CICS	No	November, 1999	See Notes 1 and 4 below.	NO[1]
Adabase/Natural	Yes		Completed with SAGA consulting support, September	NO[1]
Total Bridge	Yes		Preliminary Analysis from SAGA, Dec 1998, showed no date related routines in the bridge.	NO[1]
Vision (Quickjob)	No	November, 1999	See Notes 1 and 4 below.	NO[1]
Natural Security	Yes		Completed with SAGA consulting support, September	NO[1]
Predict	Yes		Completed with SAGA consulting support, September	NO[1]
FORTRAN	Yes			NO[1]
C ++	Yes			NO[1]
Other Business & Environmental Systems				
Elevators	Yes			NO[2]
Automatic Doors	Yes			NO[2]
Heating, AC, Ventilation Systems	Yes			NO[2]
Security Alarm Systems	Yes			NO[2]
Fire Alarms/Sprinkler Systems	Yes			NO[2]
Lawns/Grounds Irrigation/Sprinklers	Yes			NO[2]
Greenhouse Timers	Yes			NO[2]
Emergency Generators	Yes			NO[2]
Lighting Systems, Outdoor/Security	Yes			NO[2]
Automatic Locks/Swipe Cards	Yes			NO[2]
Traffic Lights	Yes			NO[2]

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Note 1 In November of 1998, the College committed to the replacement of all Year 2000 non-compliant legacy systems with PeopleSoft Student, Human Resources and Financial systems. The public system of higher education signed a contract on January 4, 1999 with KPMG Peat Marwick, LLP to serve as a system-wide implementation partner. The implementation of those systems at RIC will cost an estimated $3.95 million ($2.65 million in FY 1999 and $1.30 Million in FY 2000). This approach will result in a cost savings of more than $2.0 million by avoiding patching/reengineering of legacy administrative systems.

Note 2 Requires Reset on Jan 1, 2000. Provides backup capability along with the Mainframe. IBM 7171 (interface to ISN) not verified by IBM as Y2K compliant. No problems anticipated. Identifying work around and alternative hardware if needed.

Note 3 All RIC networking devices reviewed to date have been certified as Y2K compliant from vendors Cisco & 3Com based on model number and version of software.

Note 4 PeopleSoft data migration will push Y2K compliance out approximately two months. Dependancies on the Mainframe will exist into Jan 2000, so that system will need to be renovated as well. Mainframe compliance is being impacted by difficulties in moving to newer SAGA products. Onsite SAGA consulting has been brought in to remedy the situation.

NO[1] 3rd Party Software products will not have IV&V.

NO[2] Embedded systems from outside vendors will not have IV&V due to the inbility of RIC to access these systems.

NO[3] Mission critical systems being replaced by PeopleSoft will not be tested using IV&V since the new systems are Y2K compliant.

- Admissions & Records Modules & Student Registration Live on Y2K compliant PS, Oct 99.
  Financial Aid & Student Financials to use mainframe for end of year disbursment and billing.
  Fin Aid & Student Fin Switched to PS for the first of the year Jan 00 processing.
  PACE, INAS and PARS are incorporated within PeopleSoft and Y2K compliant.

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All Operating Systems				
Windows 95/NT	Yes			No
Mac O/S	Yes			No
VMS	Yes			No
UNIX	Yes			No
Novell	Yes			No
Desktop Applications		December 1999	Year 2000 Problems with desktop computing applications will be resolved by replacing applications or obtaining upgrades from vendors.	
Computing Hardware				
DEC 6000	Yes			No
NT Servers	Yes			No
DEC Alpha Servers	Yes			No
IBM Desktop Computers	Yes	December 1999	With only a few minor exceptions all IBM clone PC's have been upgraded or replaced.	No
Dell Desktop Computers	Yes			No
Mac/Apple Desktop Computers	Yes			No
Network Electronics Hardware/Software				
Routers	Yes		Replaced through Bond initiative.	No
Switches	Yes		Replaced through Bond initiative.	No
Terminal Servers	Yes			No
Modems	Yes			No

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Administrative Systems/Applications				
Student Information, SCT SIS +	Yes		New Y2K compliant systems are now operational.	No
Financial/Accounting, SCT FRS +	Yes		New Y2K compliant systems are now operational.	No
Human Resource, SCT HRS +	Yes		New Y2K compliant systems are now operational.	No
Alumni Development System	Yes		Implementation of new Windows based system completed.	No
Other Administrative Systems				
Student ID/Swipe Cards	Yes			No
Library Systems	Yes		Confirmed at 12/9/97 HELIN consortium meeting.	No
Telephone Systems	Yes			No
IVR Systems	No	November 1999	New system (EPOS) to be installed as part of Bond initiative.	No
Checks 123	Yes			No
Schedule 25	Yes			No
Capital Asset	No	November 1999	System will be replaced.	No
Budget System	Yes		System has been replaced.	No
Student Archive System	Yes			No
Bookstore System	Yes		New IBM AS/400 server and associated software has been installed.	No
Academic Computing Systems/Applications				
				No
Programming Languages/Databases				
COBOL	Yes			No
SCT Series Z Tools	Yes			No

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Other Business & Environmental Systems				
Elevators	Yes		These are mechanical/electrical systems. Not affected by Year 2000 problems.	No
Automatic Doors	Yes		These are mechanical/electrical systems. Not affected by Year 2000 problems.	No
Automated Parking Systems	Yes		These are mechanical/electrical systems. Not affected by Year 2000 problems.	No
Heating, AC, Ventilation Systems	Yes		New Y2K compliant systems are now operational.	No
Security Alarm Systems	Yes		New Y2K compliant systems are now operational.	No
Fire Alarms/Sprinkler Systems	Yes		New Y2K compliant systems are now operational.	No
Lawns/Grounds Irrigation/Sprinklers	Yes		These are mechanical/electrical systems. Not affected by Year 2000 problems.	No
Greenhouse Timers	Yes		These are mechanical/electrical systems. Not affected by Year 2000 problems.	No
Emergency Generators	Yes		These are mechanical/electrical systems. Not affected by Year 2000 problems.	No
Lighting Systems, Outdoor/Security	Yes		New Y2K compliant systems are now operational.	No
Automatic Locks/Swipe Cards	Yes		These are mechanical/electrical systems. Not affected by Year 2000 problems.	No

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